



The Famous PLYMOUTH RED TAG TWINE

The best twine ever made,—void of thin and thick knotty places,—evenly twisted; goes farther per pound than any other make

FACTS ABOUT SOILS.

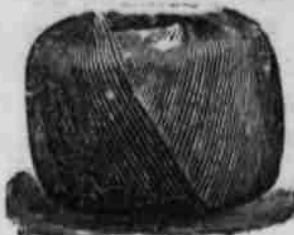
J. W. Mills.

Did it ever occur to you that the soil breathes just as plants and animals do? It is a fact that it does. Every time it rains or the land is irrigated, it exhales and when it loses its moisture it inhales. Aside from this it has less profound breathing exercises continually. The act of water penetrating the soil expels the air and as the water penetrates and leaves spaces between the soil particles, the air rushes in and takes its place. This fresh air aids the plants by making available a little more plant food and driving out the obnoxious gases that collect during the act of plant growth.

When water is applied to clay soils much of it will stand on the surface till evaporated instead of sinking in and being held in reserve for future use. Manure will improve this condition as will sand. Sandy soils, on the other hand, are improved by having clay added to them. It has been demonstrated that in this respect, humus

is ten times more efficient than clay. This physical improvement in these two types of soil may make the difference between sterility and fertility.

"RED TAG"



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Sand will absorb and retain about 15 per cent of its bulk of moisture while peat will absorb 70 to 80 per cent. This shows that the more humus a soil contains, the greater will be its absorbing and retentive powers.

The capillarity of soils deals with the power of water to travel around or through it in any or all directions, but it is generally referred to as the power to ascend. There are no tubes formed in the soil through which the moisture ascends as is generally supposed. It is simply the power of gravity and the power known as tension.

When two corks of different sizes are floating in a tub, they will come together with a bump if they are allowed to come within a certain distance of each other, or they will bump up against the side of the tub. This is because they are attracted by the larger body. It is the same force that makes chips collect and cling to-

and brings this condition about. When the particles settle together which they are always doing, capillary action is faster and we must cultivate soon or we will lose more moisture.

SEED ROT OF POTATOES.

Reports have already begun to come in of seed potatoes rotting in the ground. This trouble is caused by a fungus, or mould, that attacks the piece of tuber in the ground on the cut surface. The disease was so bad

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DURABLE



gether in a pool. In the case of water or other liquids, the force known as tension compels the fluids to spread over the surface. This is why the water extends up the sides of a glass to a slight degree and on the inside of a glass tube to a greater degree. It is well illustrated in the case of a soap bubble when the stem of the pipe is removed from the mouth before the bubble parts. In this case the tension of the liquid

last year in some fields that ninety per cent of the seed rotted in the ground. In some cases this rot started so soon as to prevent the pieces of tubers from sprouting at all. In other cases it started later, rotted the seed, then the fungus attacked the stem. Plants may be found in any field during the season more or less affected with this disease. The plants lost their green color and the edges of the leaves turn yellow or die. If the stem be pulled up, the bark will be found all right, but the splitting of the stem longitudinally will show the sap wood of the stem colored brown or yellow or in the last stages black. Microscopical examination of a cross-section of the stem will show the fungus growing in the cells and across

the sap tubes of the stem. The injury, to a large extent, at least, comes from the clogging of the sap circulation by the hypha of this fungus.

This plant, or fungus, that causes the disease, is one of the species of Fusarium, the same or similar to the one that causes the blight or so-called "sleeping disease" of the tomato. No direct remedy is known for it. One fact that is of some assistance in combatting it is that the disease is much more prevalent on land previously planted to potatoes than on alfalfa or clover land. Another thing

MOST RELIABLE



that is quite noticeable in studying the nature of the disease, is that potatoes planted whole are not attacked to such an extent as the cut ones, because of the inability of the fungus to get into the stem.

Treatment of seed with formalin, corrosive sublimate, sulphur, lime, etc., have not given any perceptible relief from it.

It is probable that in many cases at least much of the disease is carried to the field in the seed potatoes. The same fungus causes the "dry rot" of potatoes in the storage cellars. It has been very noticeable during the past winter that cellars with poor ventilation, no matter how cool and dry they were, had a high per cent of potatoes affected with this dry rot. Good ventilation and as low a temperature without danger of frost in the cellar is probably the best safeguard against loss from this cause.—E. R. Bennett, Potato Specialist, Colorado Experiment Station, Fort Collins.

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